Annual Habitat Work Plan
North Mississippi Refuges Complex
2004

I. Relationship to the HMP.

- This Annual Habitat Work Plan outlines tasks to be completed in FY 2004 in support of objectives detailed in the North Mississippi Refuges Complex Biological Review. (The station is in the process of compiling the CCP and does not yet have a Habitat Management Plan.)

II. Habitat Objectives

A. Fallow fields (Biological Review, Objective A.6. Grassland Birds, Objective C.1. Game Species)
   1. Coldwater River NWR – Provide 295 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)
   2. Dahomey NWR – Provide 104 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)
   3. Tallahatchie NWR – Provide 207 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)

B. Crop lands (Biological Review, Objective A.1. Migratory Waterfowl)
   1. Dahomey NWR – Provide 218 acres of standing crop for over-wintering waterfowl (based on objectives established by the Lower Mississippi Valley Joint Venture)
   2. Tallahatchie NWR – Provide 212 acres of standing crops for over-wintering waterfowl (based on objectives established by the Lower Mississippi Valley Joint Venture)

C. Moist soil impoundments (Biological Review, Objective A.1. Migratory Waterfowl, Objective A.7. Shorebirds)
   1. Coldwater River NWR
      a. Provide 190 acres of moist-soil habitat for over-wintering waterfowl (based on objectives established by the Lower Mississippi Valley Joint Venture)
      b. Provide 225 acres of fall foraging habitat for migrating shorebirds
   2. Dahomey NWR – Provide 318 acres of moist-soil habitat for over-wintering waterfowl (based on objectives established by the Lower Mississippi Valley Joint Venture)
   3. Tallahatchie NWR – Provide 852 acres of moist-soil habitat for over-wintering waterfowl (based on objectives established by the Lower Mississippi Valley Joint Venture)

D. Nest structures (Biological Review, Objective A.2. Cavity Nesting Ducks) – No measurable objectives yet developed

E. Invasive species (Biological Review, Objective H.1. Noxious plants and wildlife) – No measurable objectives yet developed

F. Other

1. Greentree Reservoir (Biological Review, Objective A.1. Migratory Waterfowl) – Flood greentree reservoir on Dahomey at least once every 3 – 5 years between Dec. 1 and Mar. 15 to mimic natural hydrology
2. Canebrakes (Biological Review, Objective D.2. Canebrakes) – No measurable objective yet developed.

III. Habitat Response

Not applicable. This is the first year an Annual Habitat Work Plan has been in place.

IV. Wildlife Response

Not applicable. This is the first year an Annual Habitat Work Plan has been in place.

V. Unmet Habitat Needs

Not applicable. This is the first year an Annual Habitat Work Plan has been in place.

VI. Strategies to Achieve Unmet Habitat Needs

Not applicable. This is the first year an Annual Habitat Work Plan has been in place.

VII. Management Strategy Prescriptions

A. Fallow fields

1. Coldwater River NWR
   a. Mow fields # 1,2 3,16, and 17
   b. Mowing should occur after August 1.
2. Dahomey NWR
   a. Mow fields # 16, 23, 32, 35, and 39
   b. Mowing should occur after August 1.
3. Tallahatchie NWR
   a. Mow fields # 33, 35,36,50, 63, 68,69,70, 71, and 72
   b. Mowing should occur after August 1.

B. Crop lands

1. Dahomey NWR
   a. rice: fields # 5, 29, 30, 31, 40
   b. wheat: field # 6
2. Tallahatchie NWR
   a. corn: fields # 47 and 49
   b. soybeans: fields # 46, 48, 51, 53, 54, 55, 56, and 60
   c. rice: fields # 25, 27, 30, and 31

C. Moist soil impoundments
   1. Coldwater River NWR
      a. Spring drawdown to repair levees: Units A – P
      b. Late summer drawdown (for shorebirds): Units Q, R, W, and X
   2. Dahomey NWR
      a. Units 9, 10, 11, and 12: drawdown in spring, disk in summer
      b. Units 30 and 40 flood after rice harvested
   3. Tallahatchie NWR
      a. Units 26 and 28: drawdown in April
      b. Unit 58b: drawdown in April, monitor vegetation response and plant in millet before July 1 if heavily infested with cockleburr and sesbania
   4. FmHA
      a. Drain units on: Harris (for levee repair/structure replacement) and Robertson (except western unit)
      b. Hold water on: Pennington, Wilkins (large unit and cypress slough), Gillon, and Robertson (western unit)

D. Nest structures
   1. Wood duck boxes – maintain existing wood duck nest boxes, monitor species and success in boxes, erect new boxes where needed
   2. Bluebird boxes – maintain existing boxes, monitor box success, erect new boxes where needed.
   3. Nest platform – research feasibility of constructing nesting platforms to place at Walker Tract

E. Invasive species
   1. Coldwater River NWR
      a. Control nutria and beaver in ponds and ditches
      b. Mow sesbania prior to seed set in moist soil units
      c. Remove (bulldoze) willows in Unit M
      d. Treat water primrose, perennial smartweed, and willows with Rodeo as necessary to release annual grasses and sedges in moist soil units.
   2. Dahomey NWR
      a. Work with Delta State University to map extent of exotic species
      b. Mow sesbania prior to seed set in moist soil units
   3. Tallahatchie NWR
      a. Control nutria, particularly on the Walker Tract
      b. Treat parrotfeather colonies, lotus, and willows on Walker Tract with Rodeo

F. Other

1. Greentree Reservoir – Unit 37b (Dahomey): flood Dec. 1, 2004 – March 15, 2005. Fluctuate water levels during this period if possible.
2. Cane reestablishment: Unit 42 (Dahomey) – continue support of University of Memphis researchers
3. Cane release cuttings: eastern edge of Unit 23 (Dahomey) across from unit 42 – girdle overstory trees in study area and measure response of cane (research conducted by University of Memphis staff.)

VIII. Habitat Management Documentation

A. Fallow Fields (Dahomey, Tallahatchie and Coldwater River NWRs)

Resources Needed:

1. Farm tractors with bush hog attachments
2. Diesel Fuel
3. Transport truck and trailer for hauling equipment
4. RONS (see appendix 8)

B. Crop Lands (Dahomey and Tallahatchie NWRs)

Resources Needed:

1. Farming contracts (appendix 9,10 & 11)
2. Pesticide use proposals (appendix 12)
3. RONS (appendix 8)

C. Moist soil units (Dahomey, Tallahatchie and Coldwater River NWRs)

Resources Needed:

1. Farm Tractors with disc and bush hog attachments
2. Diesel Power units for pumps
3. Diesel Fuel
4. Transport Truck and trailer for hauling equipment
5. RONS (appendix 8)

D. Nest Structures (Dahomey, Tallahatchie and Coldwater River NWRs)

Resources Needed

1. ATVs
2. Fuel
3. Interns/Bio techs for monitoring
4. RONS (appendix 8)

E. Invasive Species (Dahomey, Tallahatchie and Coldwater River NWRs)

Resources Needed:

1. Bull dozer
2. Farm tractor with bush hog
3. Diesel fuel
4. Pesticide Use Proposals (appendix 12)
5. Special Use Permit for Delta State University (will be issued in the fall of 2004)
6. RONS (appendix 8)

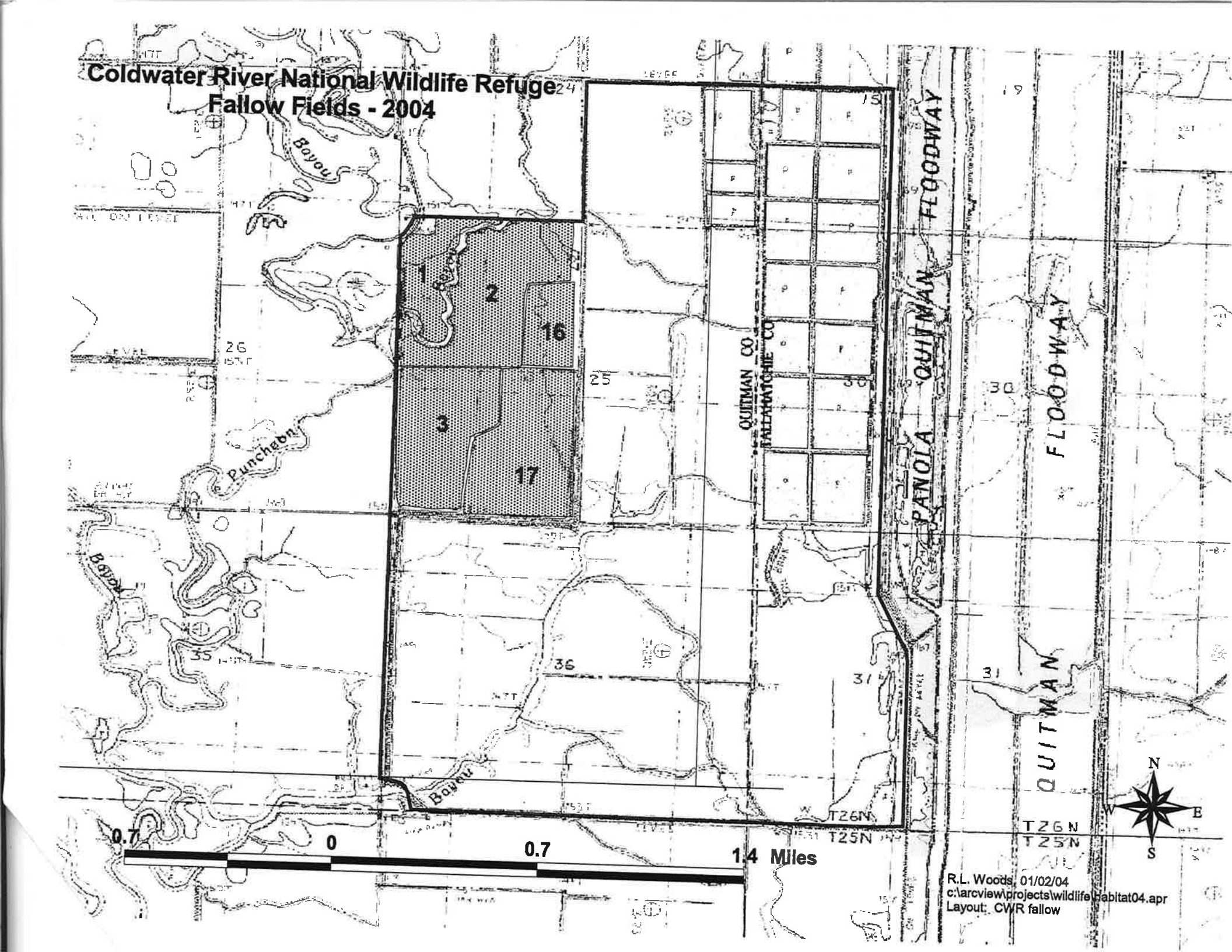
F. Other (Dahomey)

1. Special Use Permit for Memphis State research project
2. RONS (appendix 8)
3. ATVs

IX. Appendix

Appendix	1	Habitat Management Maps Map of Coldwater River NWR Fallow Fields Map of Dahomey NWR Fallow Fields Map of Tallahatchie NWR Fallow Fields Map of Coldwater River NWR Management Activities Map of Dahomey NWR Management Activities Map of Tallahatche Farm Fields and Moist soil units Map of Tallahatchie NWR Walker Tract management activities
Appendix	2	List of RONS projects
Appendix	3	Tallahatchie Farming Contract with H.C. Strider Jr.
Appendix	4	Dahomey Farming Contract with Jim Clemons
Appendix	5	Dahomey Farming Contract with James Herbison
Appendix	6	Approved Pesticide Use Proposals and Section 7 #R4-04-43675-02 Rodeo #R4-04-43675-05 Dual II Magnum #R4-04-43675-06 Roundup Custom #R4-04-43675-07 Assure II #R4-04-43675-08 Regiment #R4-04-43675-10 Ultra Blazer #R4-04-43675-11 Regiment #R4-04-43675-12 Celebrity #R4-04-43675014 Newpath

APPENDIX 1


Coldwater River National Wildlife Refuge
Fallow Fields - 2004
1
2
16
3
17
Bayou
Punchbowl
QUITMAN CO
TALLAHATCHIE CO
PANOLA QUITMAN FLOODWAY
QUITMAN FLOODWAY
26
25
30
31
35
36
T26N
T25N
0.7
0
0.7
1.4 Miles
N
S
E
W
R.L. Woods, 01/02/04
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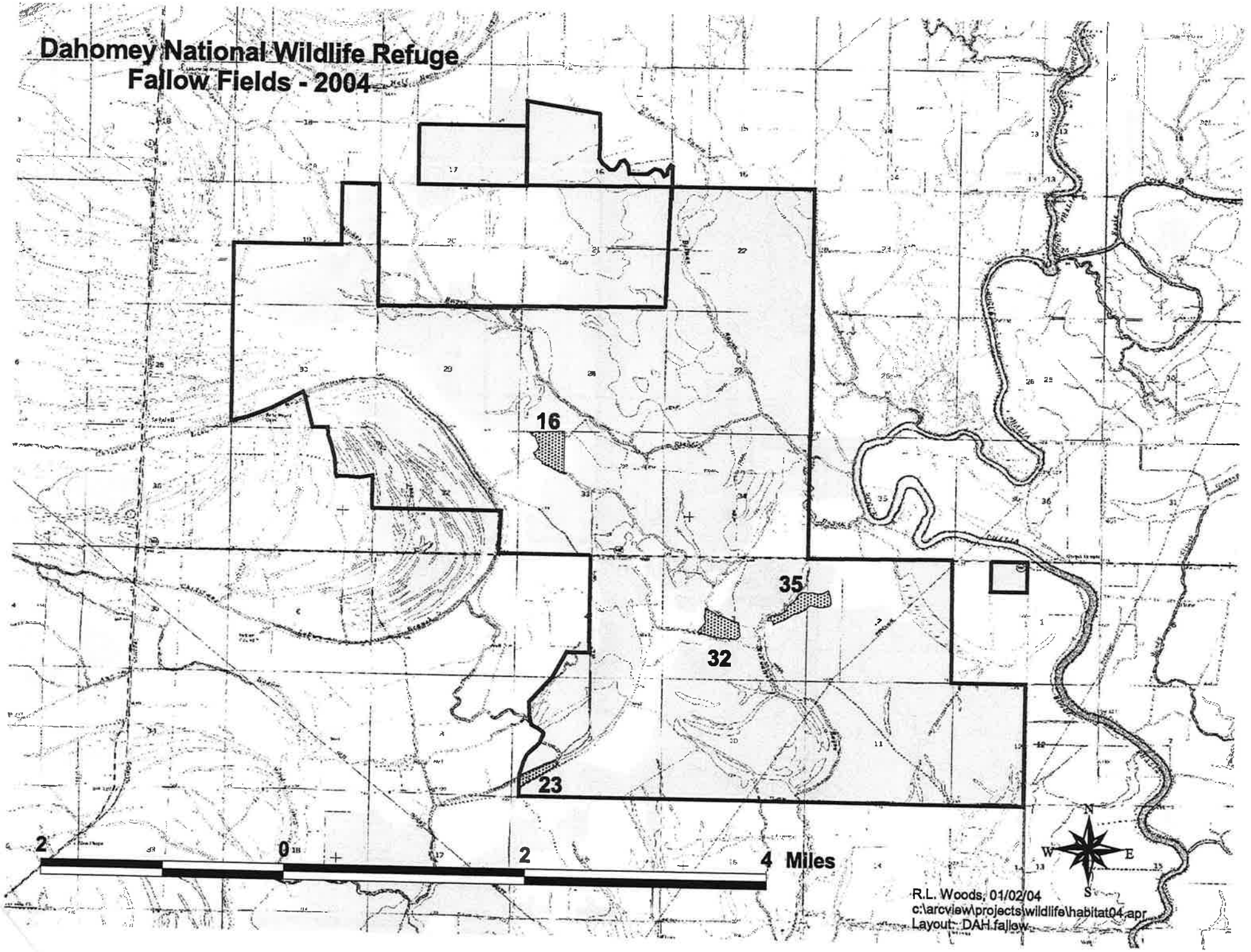
Layout: CWR fallow


Dahomey National Wildlife Refuge
Fallow Fields - 2004
16
35
32
23
2
0
2
4 Miles
N
W
E
S
R.L. Woods, 01/02/04
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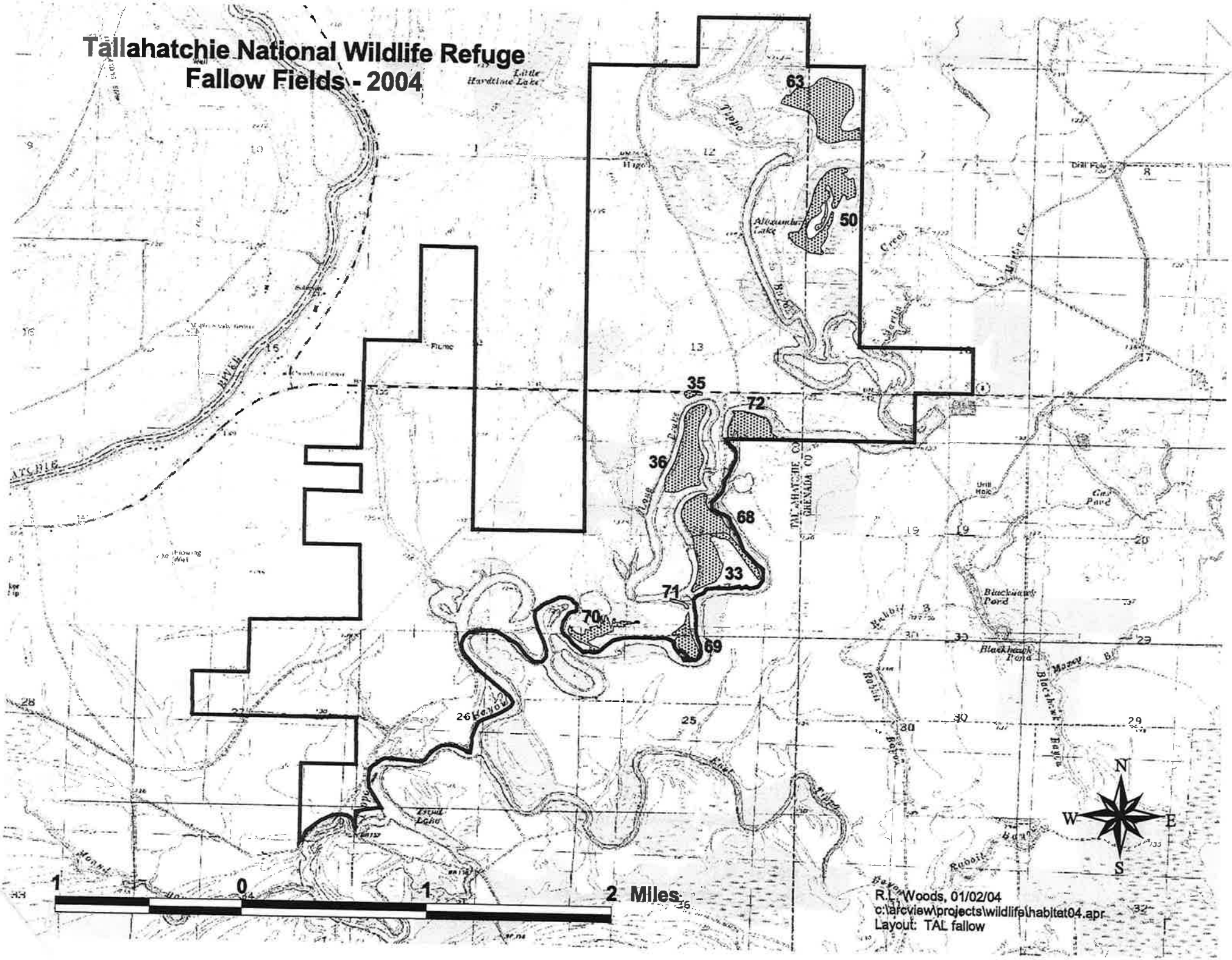
Layout: DAH.fallow


Tallahatchie National Wildlife Refuge
Fallow Fields - 2004
63
50
35
72
36
68
33
71
70
69
26
1
0
1
2 Miles
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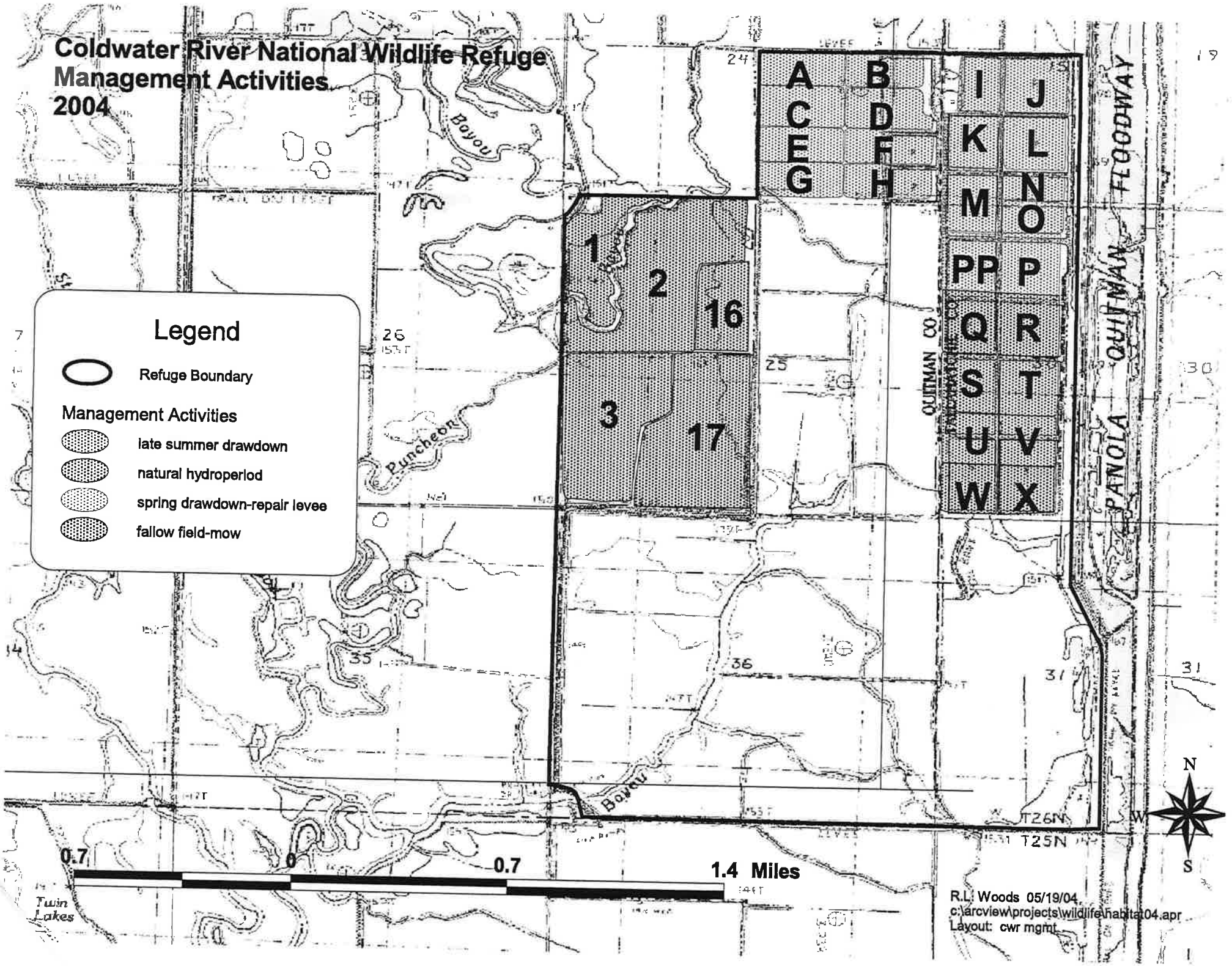
W
E
S
R.L. Woods, 01/02/04
c:\arcview\projects\wildlife\habitat04.apr
Layout: TAL fallow


Coldwater River National Wildlife Refuge
Management Activities
2004
Legend
Refuge Boundary
Management Activities
late summer drawdown
natural hydroperiod
spring drawdown-repair levee
fallow field-mow
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
PP
Q
R
S
T
U
V
W
X
1
2
16
3
17
Bayou
Puncheon
QUITMAN
PANOLA
FLOODWAY
T26N
T25N
0.7
0
0.7
1.4 Miles
N
S
W
Twin Lakes
R.L. Woods 05/19/04
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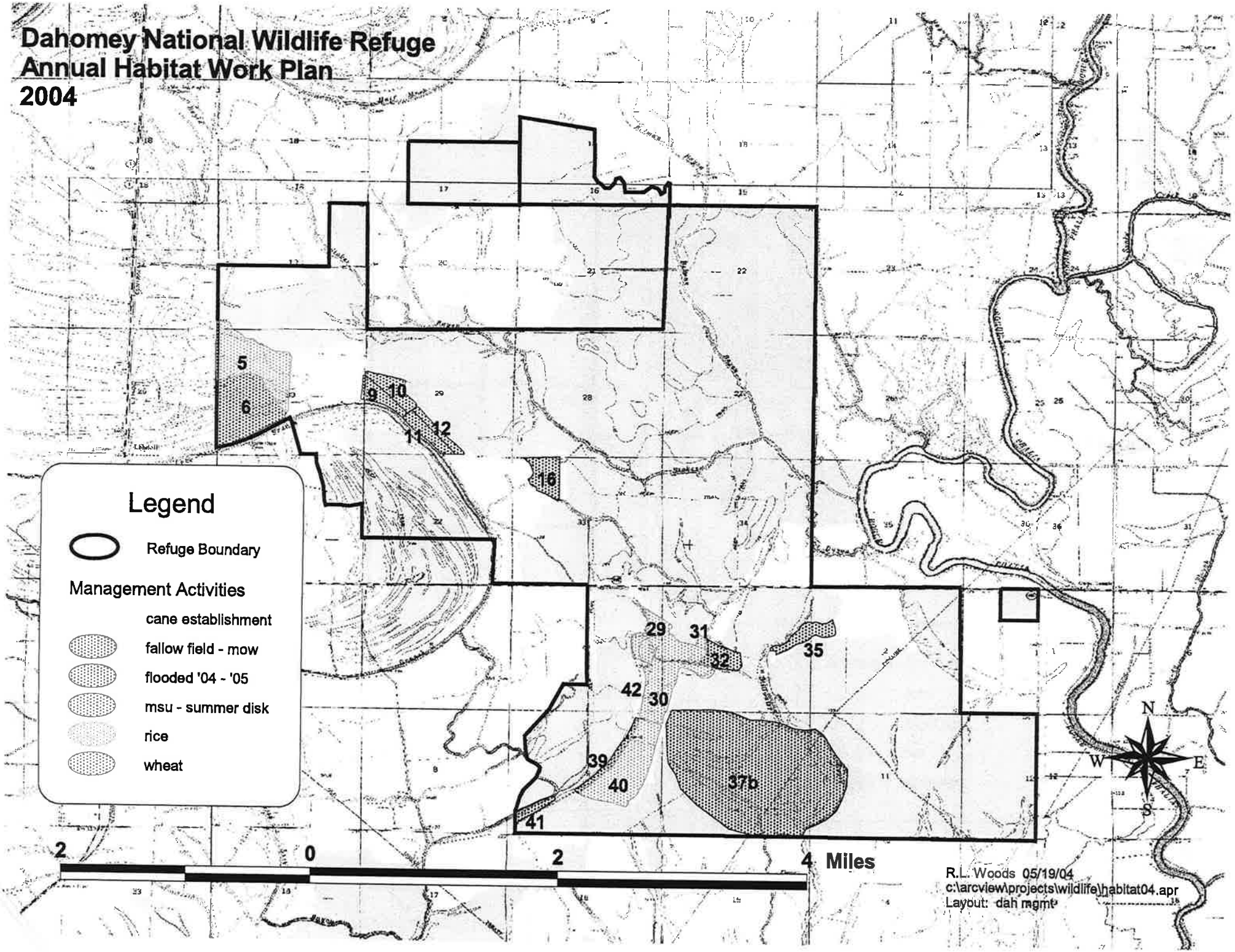
Layout: cwr mgmt


Dahomey National Wildlife Refuge
Annual Habitat Work Plan
2004
Legend
Refuge Boundary
Management Activities
cane establishment
fallow field - mow
flooded '04 - '05
msu - summer disk
rice
wheat
5
6
9
10
11
12
16
29
31
32
35
42
30
39
40
41
37b
2
0
2
4 Miles
N
W
E
S
R.L. Woods 05/19/04
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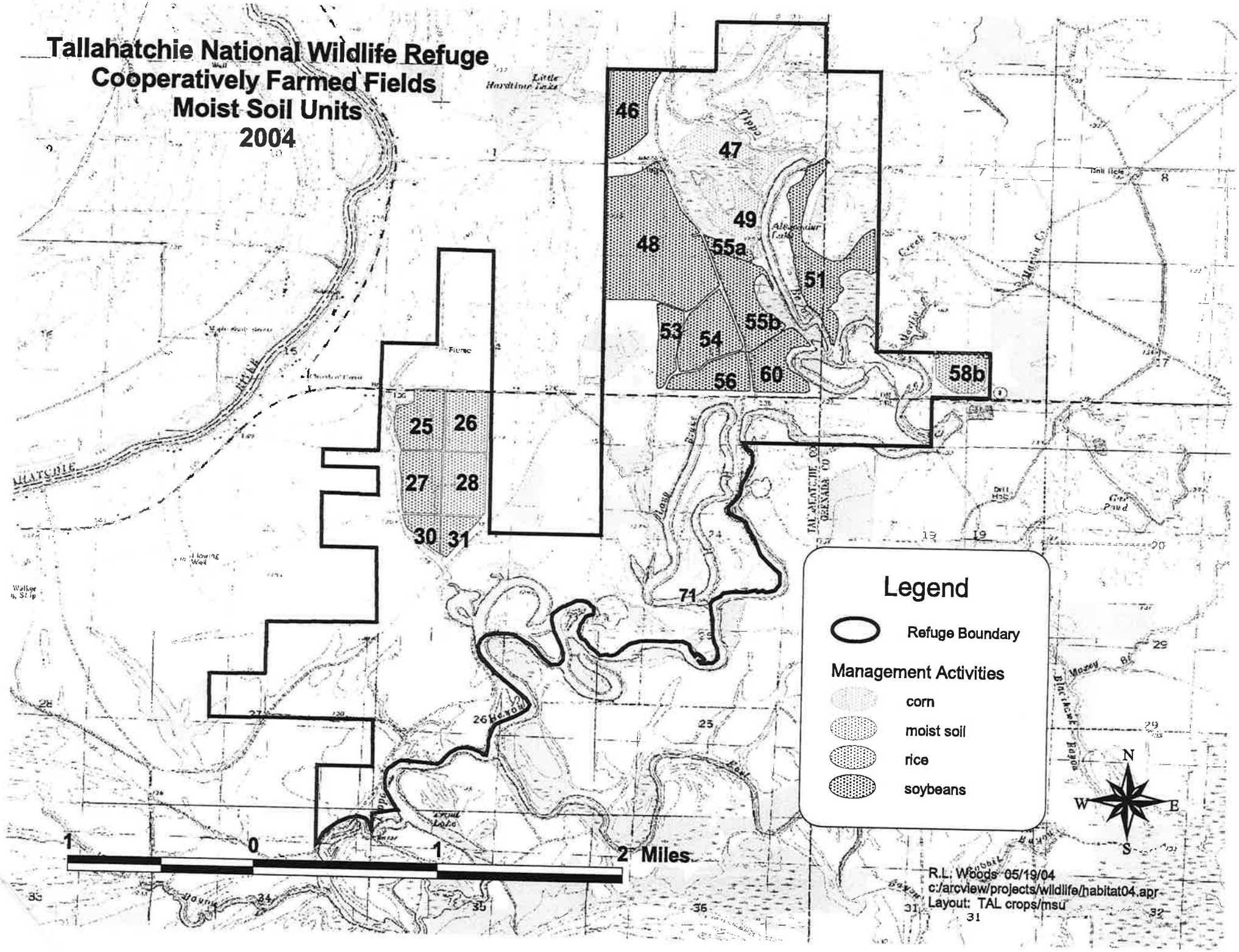
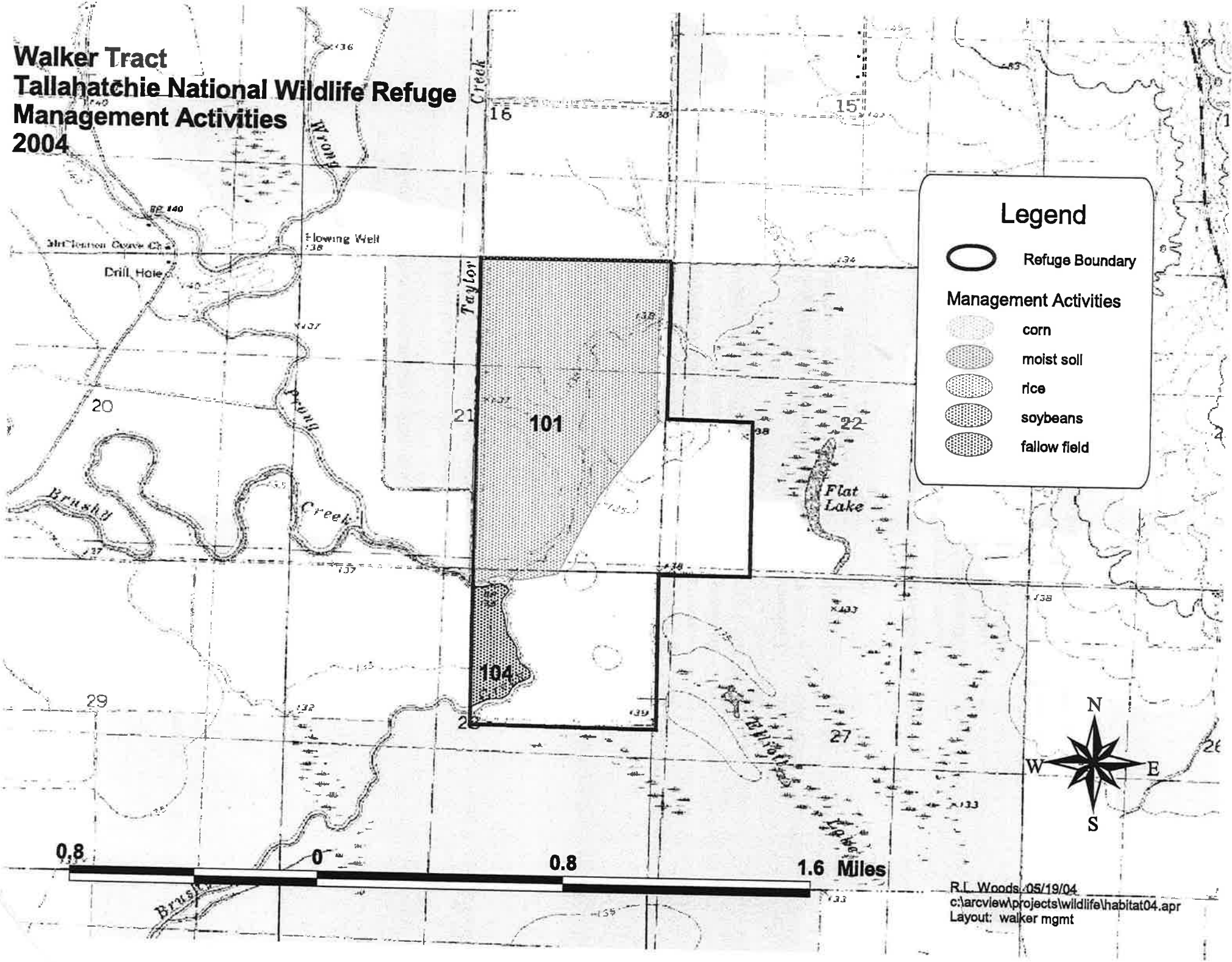
Layout: dah mgmt

Tallahatchie National Wildlife Refuge
Cooperatively Farmed Fields
Moist Soil Units
2004




Walker Tract
Tallahatchie National Wildlife Refuge
Management Activities
2004
Legend
Refuge Boundary
Management Activities
corn
moist soil
rice
soybeans
fallow field
101
104
Taylor Creek
Wrong Creek
Brushy Creek
Flowing Well
Drill Hole
Flat Lake
15
16
20
21
22
27
29
N
S
E
W
0,8
0
0.8
1.6 Miles
R.L. Woods 05/19/04
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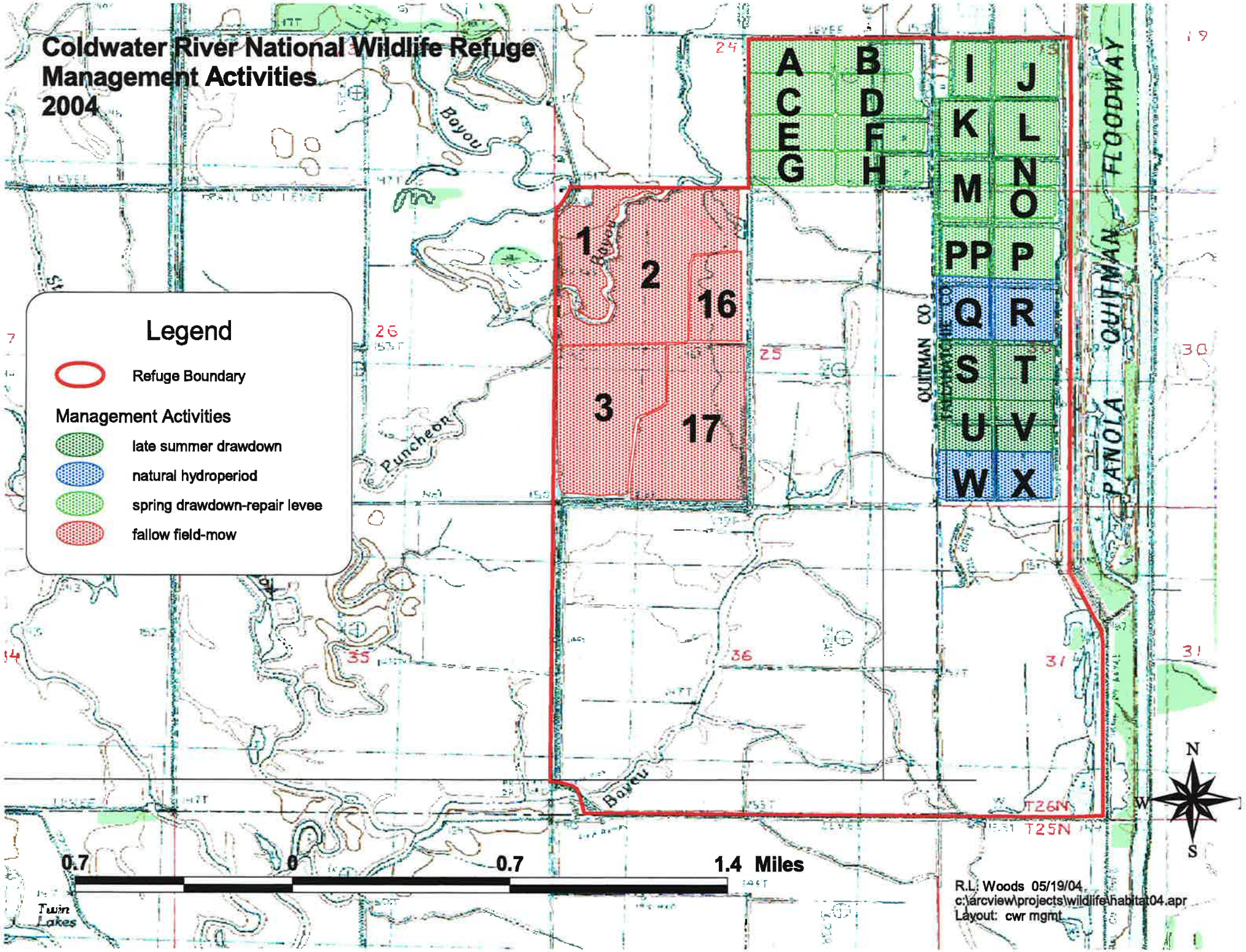
Layout: walker mgmt


Coldwater River National Wildlife Refuge
Management Activities
2004
Legend
Refuge Boundary
Management Activities
late summer drawdown
natural hydroperiod
spring drawdown-repair levee
fallow field-mow
A
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16
17
Bayou
Puncheon
QUITMAN
PANOLA
FLOODWAY
T26N
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Twin Lakes
R.L. Woods 05/19/04
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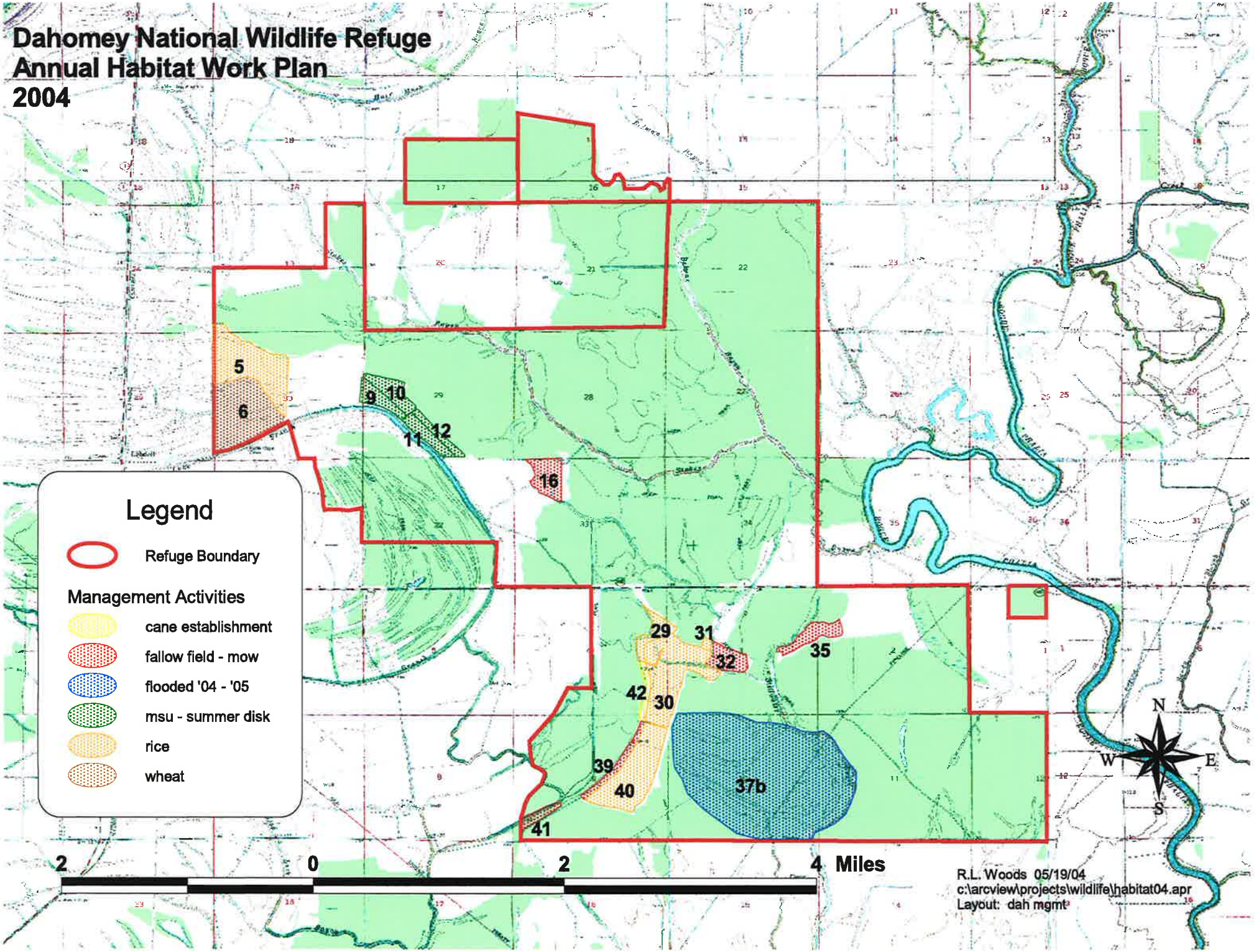
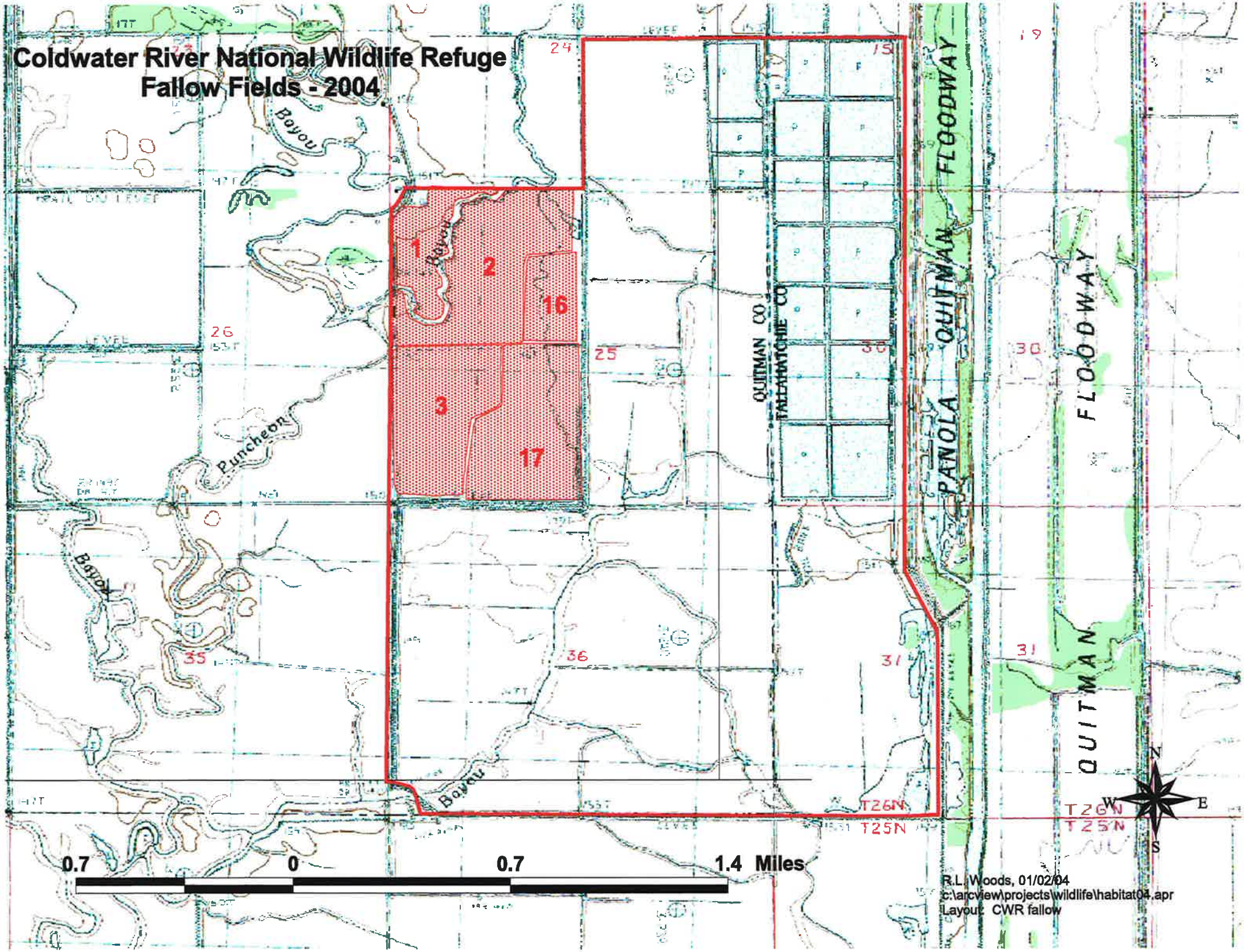
Layout: cwr mgmt

Dahomey National Wildlife Refuge
Annual Habitat Work Plan
2004




Coldwater River National Wildlife Refuge
Fallow Fields - 2004
1
2
16
3
17
Bayou
Puncheon
Bayou
Bayou
QUITMAN CO
TALLAHATCHIE CO
PANOLA
QUITMAN FLOODWAY
QUITMAN FLOODWAY
T26N
T25N
T26N
T25N
0.7
0
0.7
1.4 Miles
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W
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R.L. Woods, 01/02/04
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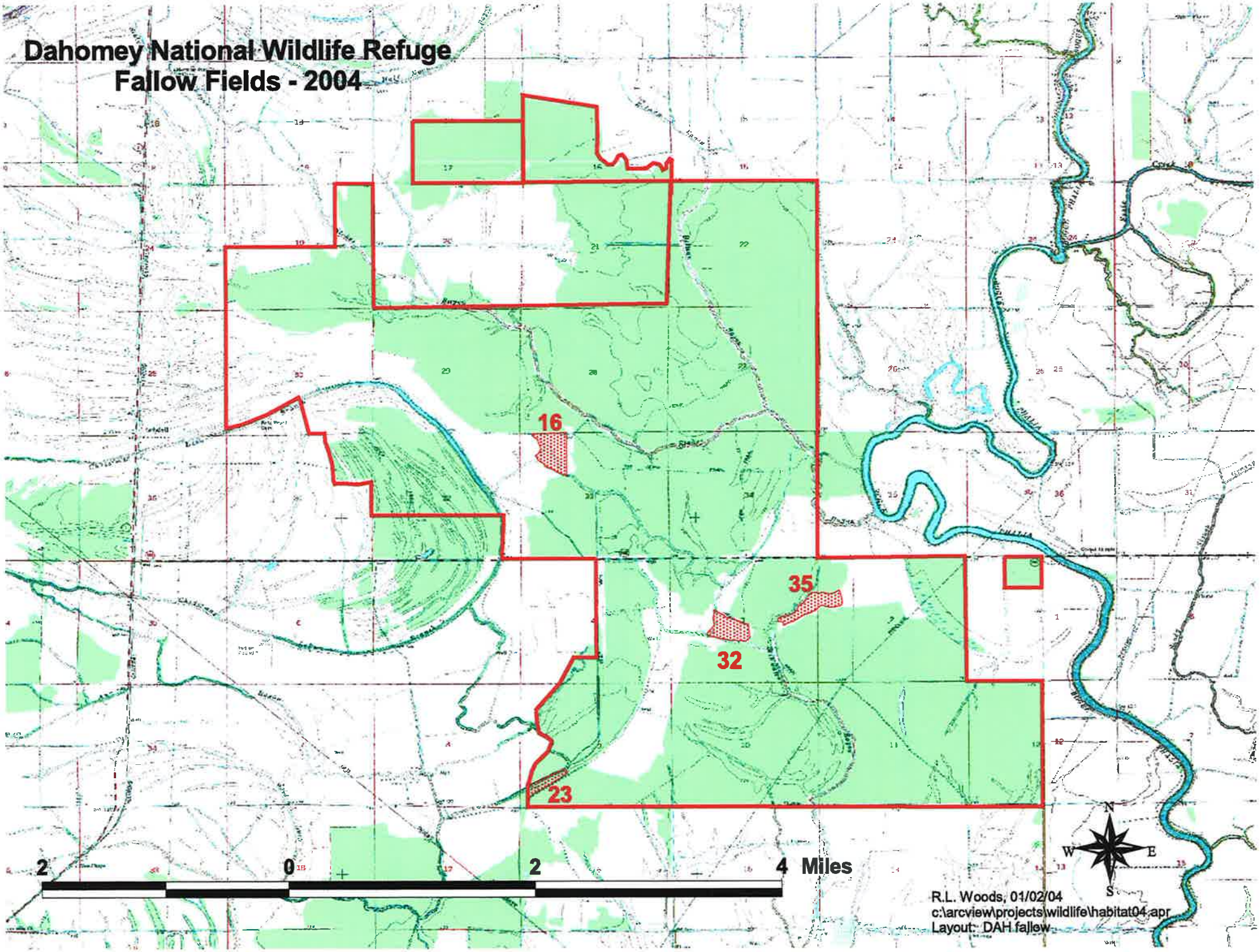
Layout: CWR fallow


Dahomey National Wildlife Refuge
Fallow Fields - 2004
16
35
32
23
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R.L. Woods, 01/02/04
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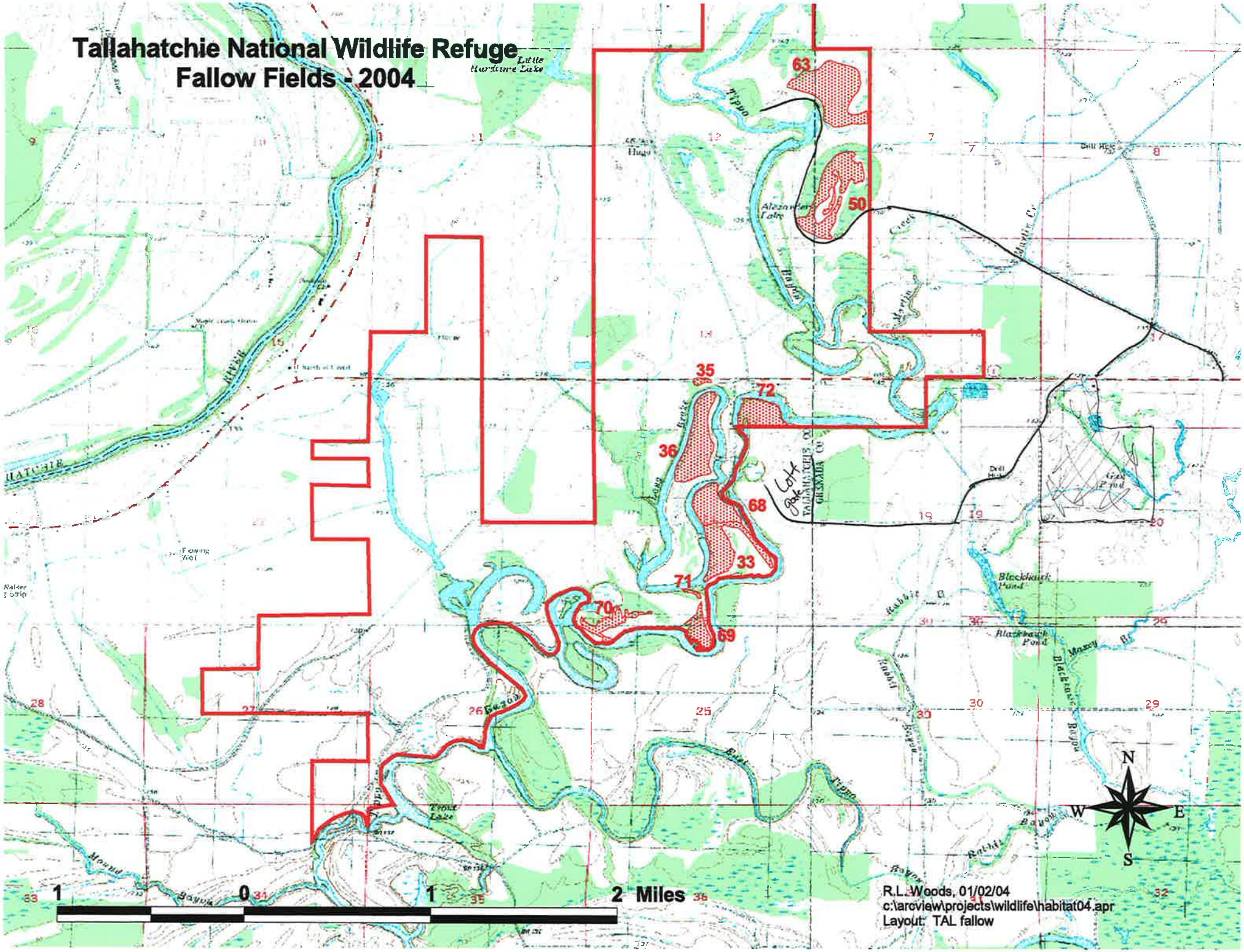
Layout: DAH fallow


Tallahatchie National Wildlife Refuge
Fallow Fields - 2004
63
50
35
72
36
68
33
71
70
69
N
W
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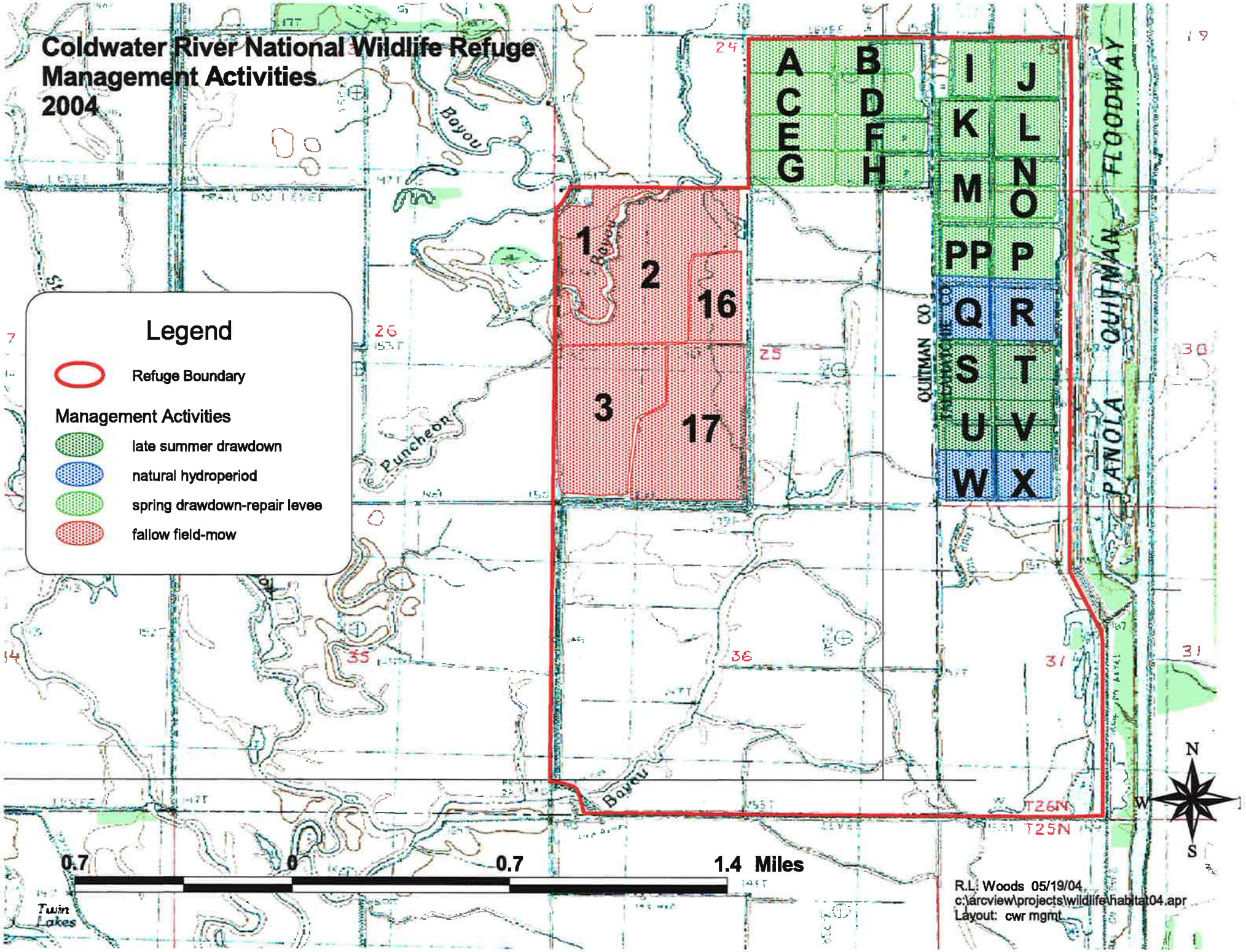
S
1 0 1 2 Miles
R.L. Woods, 01/02/04
c:\arcview\projects\wildlife\habitat04.apr
Layout: TAL fallow


Coldwater River National Wildlife Refuge
Management Activities
2004
Legend
Refuge Boundary
Management Activities
late summer drawdown
natural hydroperiod
spring drawdown-repair levee
fallow field-mow
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
PP
Q
R
S
T
U
V
W
X
1
2
3
16
17
Bayou
Puncheon
QUITMAN CO
QUITMAN FLOODWAY
PANOLA
T26N
T25N
0.7
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0.7
1.4 Miles
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Twin Lakes
R.L. Woods 05/19/04
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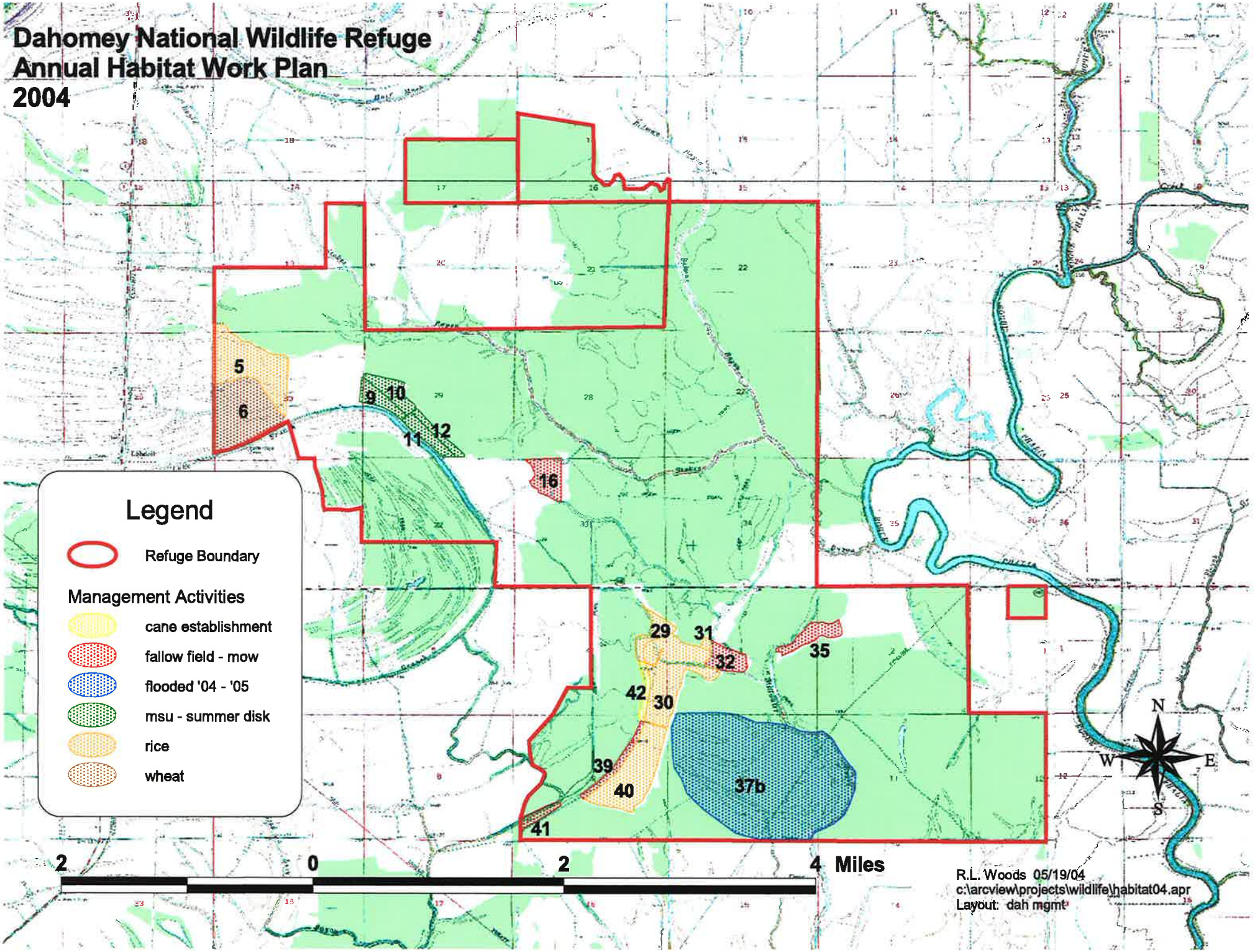
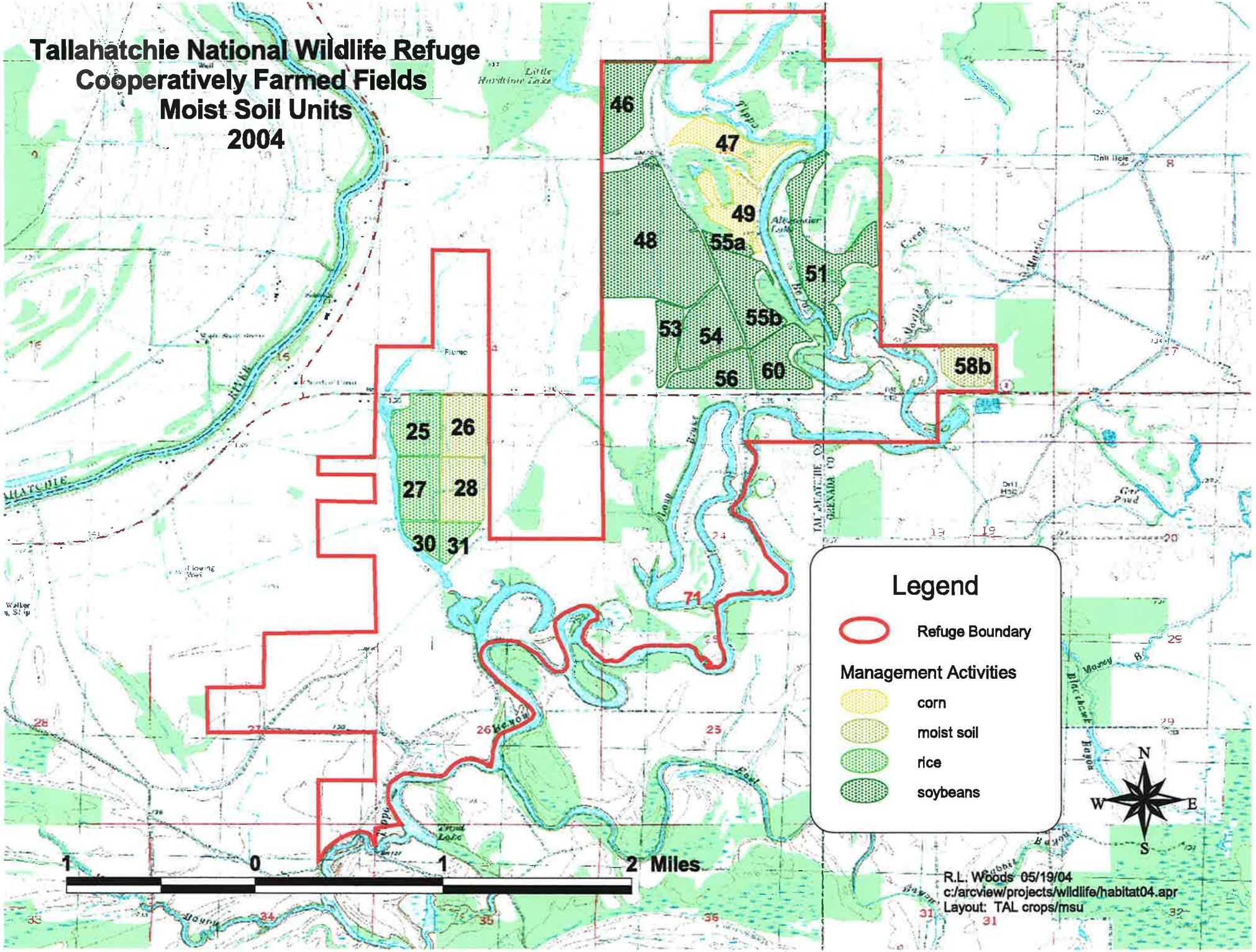
Layout: cwr mgmt

Dahomey National Wildlife Refuge
Annual Habitat Work Plan
2004




Tallahatchie National Wildlife Refuge
Cooperatively Farmed Fields
Moist Soil Units
2004
46
47
48
49
55a
51
53
54
55b
56
60
58b
25
26
27
28
30
31
71
Legend
Refuge Boundary
Management Activities
corn
moist soil
rice
soybeans
N
W
E
S
1 0 1 2 Miles
R.L. Woods 05/19/04
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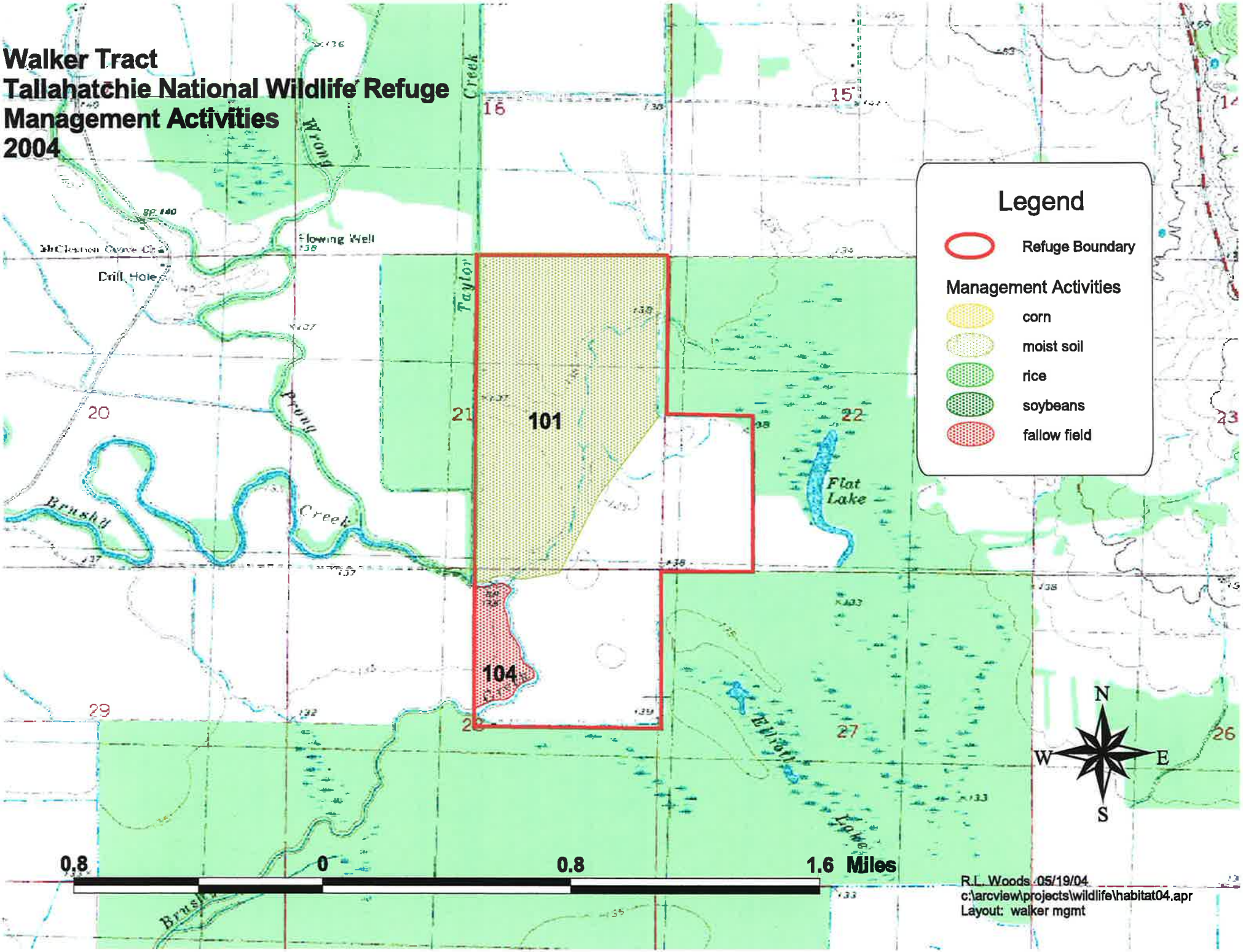
Layout: TAL crops/msu


Walker Tract
Tallahatchie National Wildlife Refuge
Management Activities
2004
Legend
Refuge Boundary
Management Activities
corn
moist soil
rice
soybeans
fallow field
101
104
Taylor Creek
Prong
Brushy Creek
Flat Lake
Flowing Well
Drill Hole
N
S
E
W
0,8
0
0.8
1.6 Miles
R.L. Woods 05/19/04
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Layout: walker mgmt

Coldwater River NWR
AHWP - 2004
Evaluation

Management Unit	Acres	Conservation Target(s) (Habitat/Wildlife)	Habitat Objective	Current Condition	Management Prescription	Supporting Documentation	Habitat Response	Wildlife Response	Unmet Habitat Needs	Strategies to Achieve Unmet Habitat Needs
Field 1	31	Fallow Fields/ Grassland Birds	Provide 295 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits	Fallow Field	Mow after August 1 to prevent colonization by woody vegetation	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Field 2	85	Fallow Fields/ Grassland Birds	Provide 295 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)	Fallow Field	Mow after August 1 to prevent colonization by woody vegetation	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Field 3	72	Fallow Fields/ Grassland Birds	Provide 295 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)	Fallow Field	Mow after August 1 to prevent colonization by woody vegetation	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Field 16	24	Fallow Fields/ Grassland Birds	Provide 295 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)	Fallow Field	Mow after August 1 to prevent colonization by woody vegetation	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Field 17	82	Fallow Fields/ Grassland Birds	Provide 295 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail)	Fallow Field	Mow after August 1 to prevent colonization by woody vegetation	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Catfish Ponds	420	Specific targets below	Specific objectives below	See below	See below	N/A	Variable, see below	Pond acreage accounts for 18% of total Refuge acreage. To date, 29% of the ducks on the Refuge have been found on the ponds.	N/A	N/A
Pond A	16	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	Late growth of *Bacopa* sp., *Sphenoclea* sp. and *Sesbania* sp. due to water remaining for bulk of growing season. Small amount of sprangletop and toothcup	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 5% of total waterfowl on ponds.	Did not dry completely due to bottom topography.	Smooth bottom and gently slope toward structure. Ditch pools if necessary.

Coldwater River NWR
AHWP - 2004
Evaluation

Pond B	14	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by spike rush, coffeeweed, and toothcup. Sprayed willow seedlings with Rodeo.	Accounts for 3% of total pond acreage. To date (Dec. 21, 2004) has supported 6% of total waterfowl on ponds.	N/A	N/A
Pond C	20	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by ludwigia and spike rush.	Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 3% of total waterfowl on ponds.	N/A	N/A
Pond D	18	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by cutgrass and sedge. Sprayed willow seedlings with Rodeo.	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 3% of total waterfowl on ponds.	N/A	N/A
Pond E	16	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by millet and smartweed	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 5% of total waterfowl on ponds.	N/A	N/A
Pond F	17	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by coffeeweed, smartweed, and spike rush. Sprayed willow seedlings with Rodeo.	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 3% of total waterfowl on ponds.	N/A	N/A
Pond G	16	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by millet and coffeeweed	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 1% of total waterfowl on ponds.	N/A	N/A
Pond H	17	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by ludwigia and coffeeweed	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 1% of total waterfowl on ponds.	N/A	N/A
Pond I	14	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by smartweed and sedge	Accounts for 3% of total pond acreage. To date (Dec. 21, 2004) has supported 1% of total waterfowl on ponds.	N/A	N/A
Pond J	20	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by smartweed and spike rush. Sprayed willow seedlings with Rodeo.	Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 2% of total waterfowl on ponds.	N/A	N/A

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Pond K	18	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by sedge and sprangletop	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 5% of total waterfowl on ponds.	N/A	N/A
Pond L	18	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	% cover dominated by sedge and sprangletop	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 3% of total waterfowl on ponds.	N/A	N/A
Pond M	21	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	predominately willows--no habitat alteration was attempted	Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 1% of total waterfowl on ponds.	N/A	N/A
Pond N/O	20	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	Predominately bare dirt as a result of levee work	Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 1% of total waterfowl on ponds.	N/A	N/A
Pond PP	17	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	N/A	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 0% of total waterfowl on ponds.	N/A	N/A
Pond P	20	Wintering Waterfowl	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	mixture of moist soil vegetation, perennial plants, and woody invasives	Cut levees down, reslope, and replace water control structures	N/A	N/A	Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 4% of total waterfowl on ponds.	N/A	N/A
Pond Q	18	Fall shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Open water	Late draw down.	N/A	Naturally dried in June. Percent cover dominated by sedge and fall panicum	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 11% of total waterfowl on ponds.	Wasn't available for shorebirds due to natural drying.	N/A
Pond R	21	Fall shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Open water	Late draw down.	N/A	N/A	Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 6% of total waterfowl on ponds.	Did not conduct draw down. Re-evaluated unit and determined would be better used for secretive marshbirds.	N/A
Pond S	18	N/A	N/A	Open water	N/A	N/A	Dried naturally in July and August. Late growth of sedge. Willows persist in center of unit	Provided habitat for a few shorebirds. Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 11% of total waterfowl on ponds.	N/A	N/A

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Pond T	19	N/A	N/A	Open water	N/A	N/A	Dried naturally in August.	As drying, used by small number of shorebirds and wading birds including white ibis. Accounts for 5% of total pond acreage. To date (Dec. 21, 2004) has supported 3% of total waterfowl on ponds.	N/A	N/A
Pond U	16	N/A	N/A	Open water	N/A	N/A	Dried naturally in June? Percent cover dominated by millet and fall panicum	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 14% of total waterfowl on ponds.	N/A	N/A
Pond V	16	Control lotus (*Nelumbo lutea*)	Control invasives	Patch of lotus in center of unit	Draw down and hold without water through the summer	N/A	Late growth of sedge. Patch of lotus persists in middle of pond	Supported up to several hundred shorebirds. Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 6% of total waterfowl on ponds.	Unit held water in low spots (around lotus patch) for bulk of summer.	Ditch to low spot or smooth bottom and deep ditch to dry and kill lotus.
Pond W	15	Fall shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Open water	Late draw down.	N/A	little growth of vegetation due to lateness of draw down	Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 4% of total waterfowl on ponds. In fall supported small numbers of shorebirds	Water held a little too long to be prime for shorebirds--had other units meeting those needs and decided to stagger draw downs	N/A
Pond X	15	N/A	N/A	N/A	N/A	N/A	N/A	Held wood ducks in late summer and early fall. Accounts for 4% of total pond acreage. To date (Dec. 21, 2004) has supported 0% of total waterfowl on ponds.	N/A	N/A
Throughout	2374	Invasive control	No measurable objective developed. Need to control nutria	Nutria causing extensive damage to levee system. Seen frequently, particularly in spring and fall	Remove nutria through trapping and shooting	N/A	N/A	Removed 5 nutria Trapping and shooting were both successful, particularly during drawdowns	N/A	Continue trapping/shooting program
Throughout	2374	Nesting structures	No measurable objective developed. Maintain and monitor wood duck nest structures.	Six wood duck nest boxes present	Monitor and maintain existing boxes	N/A	N/A	Boxes on catfish ponds used by woodpeckers who are depredating wood duck nests	Increasing problem with woodpeckers on ponds	Relocate boxes on catfish ponds to borrow pits to decrease woodpecker depredation and increase wood duck success.

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Management Unit	Acres	Conservation Target(s) (Habitat/Wildlife)	Habitat Objective	Current Condition	Management Prescription	Supporting Documentation	Habitat Response	Wildlife Response	Unmet Habitat Needs	Strategies to Achieve Unmet Habitat Needs
Unit 5	117	Croplands for wintering waterfowl	Provide 218 acres of standing crops for overwintering waterfowl	Agricultural field	Cooperative farming to grow rice.	Cooperative farming agreement	Rice crop produced	Not measured	N/A	N/A
Unit 6	121	Croplands for wintering waterfowl	Provide 218 acres of standing crops for overwintering waterfowl	Agricultural field	Cooperative farming to grow winter wheat (fall '03 - spring '04)	Cooperative farming agreement	Wheat produced and harvested. Field left fallow the remainder of season.	Not measured	N/A	N/A
Unit 9	23	Wintering waterfowl	Provide 318 acres of moist-soil habitat for overwintering waterfowl	Dominated by undesirables	Drawdown in spring, disk in summer	N/A	Initially growth of small amount of stunted millet and dominated by undesirable dry field species. Changed objective to shorebirds. Planned to disk and reflood. Disked but never flooded until late fall	No waterfowl use detected to date	Site dried too quickly in spring to promote moist soil plants. Unable to flood after disking--no power unit on site	Use cooperative farmer to plant waterfowl crop and use farmers power unit to pump up unit. Hold water longer in the spring and just let dry through evaporation.
Unit 10	27	Wintering waterfowl	Provide 318 acres of moist-soil habitat for overwintering waterfowl	Dominated by undesirables	Drawdown in spring, disk in summer	N/A	Initially had some growth of millet and other grasses. Changed prescription to mow and reflood to try to limit forbes. Did not occur. Unit flooded in fall.	Limited use by waterfowl	Site dried too quickly in spring to promote moist soil plants. No staff available to mow and no power unit available to reflood area.	Use cooperative farmer to plant waterfowl crop and use farmers power unit to pump up unit. Hold water longer in the spring and just let dry through evaporation.
Unit 11	22	Wintering waterfowl	Provide 318 acres of moist-soil habitat for overwintering waterfowl	Dominated by undesirables	Drawdown in spring, disk in summer	N/A	Initially had some growth of millet and other grasses. Changed prescription to mow and reflood to try to limit forbes. Did not occur. Unit flooded in fall.	No waterfowl use detected to date	Site dried too quickly in spring to promote moist soil plants. No staff available to mow and no power unit available to reflood area.	Use cooperative farmer to plant waterfowl crop and use farmers power unit to pump up unit. Hold water longer in the spring and just let dry through evaporation.
Unit 12	14	Wintering waterfowl	Provide 318 acres of moist-soil habitat for overwintering waterfowl	Dominated by undesirables	Drawdown in spring, disk in summer	N/A	Initially growth of small amount of stunted millet and dominated by undesirable dry field species. Changed objective to shorebirds. Planned to disk and reflood. Disked but never flooded until late fall	No waterfowl use detected to date	Site dried too quickly in spring to promote moist soil plants. Unable to flood after disking--no power unit on site	Use cooperative farmer to plant waterfowl crop and use farmers power unit to pump up unit. Hold water longer in the spring and just let dry through evaporation.

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Unit 16	37	Grassland birds	Provide 104 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail).	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 23	494	Canebrake reestablishment	No measurable objectives developed. Work with University of Memphis to develop methods of promoting the establishment and expansion of canebrakes.	Mature forest. Edges interspersed with sparse amounts of cane	In one acre block, girdle non-oak overstory trees to remove shading effect and measure impact on existing cane.	SUP	Have not received results from University of Memphis yet.	Not measured	N/A	N/A
Unit 29	25	Croplands for wintering waterfowl	Provide 218 acres of standing crops for overwintering waterfowl	Agricultural field	Cooperative farming to grow rice.	Cooperative farming agreement	Rice crop produced	Not measured	N/A	N/A
Unit 30	119	Croplands for wintering waterfowl	Provide 218 acres of standing crops for overwintering waterfowl	Agricultural field	Cooperative farming to grow rice.	Cooperative farming agreement	Rice crop produced	Not measured	N/A	N/A
Unit 31	3	Croplands for wintering waterfowl	Provide 218 acres of standing crops for overwintering waterfowl	Agricultural field	Cooperative farming to grow rice.	Cooperative farming agreement	Rice crop produced	Not measured	N/A	N/A
Unit 32	28	Grassland birds	Provide 104 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail).	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 35	27	Grassland birds	Provide 104 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail).	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 37b	596	Greentree Reservoir	Flood greentree reservoir at least once every 3 - 5 years between December 1 and March 15 to mimic natural hydrology	Greentree Reservoir	Place boards in structure December of 2004 and allow to fill naturally. Pull boards no later than March 15, 2005	N/A	Not yet measured	Not yet measured	N/A	N/A
Unit 39	18	Grassland birds	Provide 104 acres of old field habitat for grassland birds and other early successional species (i.e. rabbits and quail).	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow

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Unit 40	104	Croplands for wintering waterfowl	Provide 218 acres of standing crops for overwintering waterfowl	Agricultural field	Cooperative farming to grow rice.	Cooperative farming agreement	Rice crop produced	Not measured	N/A	N/A
Unit 42	13	Canebrake reestablishment	No measurable objectives developed. Work with University of Memphis to develop methods of promoting the establishment and expansion of canebrakes.	Fallow field	Plant cane rhizomes in 4 x 4 grids throughout area to test the impact of competition on cane plantings.	SUP	Shoots planted in 2003 had >50% survival (9 plots). Sixteen additional plots were added in 2004	Not measured	N/A	N/A
Throughout	9691	Nesting structures	No measurable objective developed. Maintain and monitor wood duck nest structures.	Thirty-five wood duck nest boxes present, though some need replacement and relocation.	Replace and relocate as necessary. Monitor existing boxes	N/A	All smaller boxes were replaced. Boxes on steep slopes were moved back from slopes where possible.	Boxes heavily used with high occurrence of dump nesting.	Dump nesting increasing	Test methods to reduce dump nesting without increasing the number of boxes.
Throughout	9691	Invasive Control	No measurable objective developed. Work with Delta State to determine extent of exotic species.	Several species of invasive exotic species occur on the refuge but the extent of occurrence is unknown.	Using the Conservation Biology class at Delta State, locate and map the extent of occurrence for invasive exotics occurring on the refuge	SUP	Waiting for reports (should be received by Jan. 2005)	N/A	N/A	N/A

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Management Unit	Acres	Conservation Target(s) (Habitat/Wildlife)	Habitat Objective	Current Condition	Management Prescription	Supporting Documentation	Habitat Response	Wildlife Response	Unmet Habitat Needs	Strategies to Achieve Unmet Habitat Needs
Unit 25	41	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Rank vegetation, particularly rush (*Juncus* sp.)	Plant in rice to set back succession and provide food for waterfowl	Cooperative farming agreement	Planted in soybeans and millet. Harvested soybeans, left millet	Little waterfowl use to date	Uncertain, disturbance may be a factor, or seed availability may be an issue	Evaluate seed availability. Plant screening vegetation along roadside. Leave more standing vegetation in future.
Unit 26	41	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Farmed 2003 in milo	April draw down to promote growth of moist soil vegetation	N/A	Unit dominated by coffeeweed, and cattails, with some milo resprouting	Little waterfowl use to date	More intensive management needed. May need to reflood after germination to promote more moist soil plants	Unit mowed to allow waterfowl access to unit. May need to farm next year to further set back succession
Unit 27	39	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Rank vegetation, particularly rush (*Juncus* sp.)	Plant in rice to set back succession and provide food for waterfowl	Cooperative farming agreement	Planted in soybeans and millet. Harvested soybeans, left millet	Little waterfowl use to date	Uncertain, disturbance may be a factor, or seed availability may be an issue	Evaluate seed availability. Plant screening vegetation along roadside. Leave more standing vegetation in future.
Unit 28	42	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Farmed in 2003 in milo	April draw down to promote growth of moist soil vegetation	N/A	Unit dominated by coffeeweed, and cattails, with some milo resprouting	Little waterfowl use to date	More intensive management needed. May need to reflood after germination to promote more moist soil plants	Unit mowed to allow waterfowl access to unit. May need to farm next year to further set back succession
Unit 30	14	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Rank vegetation with very little wildlife benefit. Typically supports robust stand of coffeeweed	Plant in rice to set back succession and provide food for waterfowl	Cooperative farming agreement	Planted in soybeans and millet. Harvested soybeans, left millet	Little waterfowl use to date	Uncertain, disturbance may be a factor, or seed availability may be an issue	Evaluate seed availability. Plant screening vegetation along roadside. Leave more standing vegetation in future.
Unit 31	14	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Rank vegetation with very little wildlife benefit. Typically supports robust stand of coffeeweed	Plant in rice to set back succession and provide food for waterfowl	Cooperative farming agreement	Planted in soybeans and millet. Harvested soybeans, left millet	Little waterfowl use to date	Uncertain, disturbance may be a factor, or seed availability may be an issue	Evaluate seed availability. Plant screening vegetation along roadside. Leave more standing vegetation in future.
Unit 33	22	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 35	1	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow

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Unit 36	30	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	Mowed in June/July. Did not evaluate habitat response	Did not evaluate wildlife response	Unknown	Evaluate wildlife use of area after mowing.
Unit 46	51	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 47	42	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in corn	Cooperative farming agreement	Corn crop left standing for wildlife	Not yet evaluated	N/A	N/A
Unit 48	183	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 49	39	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in corn	Cooperative farming agreement	Corn crop left standing for wildlife	Not yet evaluated	N/A	N/A
Unit 50	31	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	Mowed in June/July. Did not evaluate habitat response	Did not evaluate wildlife response	Unknown	Evaluate wildlife use of area after mowing.
Unit 51	76	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 53	24	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 54	50	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 55	60	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 56	33	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 58 b	29	Wintering waterfowl	Provide 852 acres of moist-soil habitat for overwintering waterfowl	Rank vegetation, millet from last year, but mostly cocklebur, trumpet creeper, redvine, and other undesirables	Plant millet and leave for wintering waterfowl.	Cooperative farming agreement	Planting never occurred. Result--rank vegetation consisting largely of undesirables. Millet planted in '03 did reseed and was heading out in June	Waterfowl using area in small numbers	Need to promote growth of desirable moist soil plants	Devote more personnel/time to intensive management on this unit. Or coordinate better with cooperative farmer to plant area

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Unit 60	40	Croplands for wintering waterfowl	Provide 212 acres of standing crops for over wintering waterfowl	Agricultural fields	Plant in soybeans	Cooperative farming agreement	Bumper crop of beans. Harvested and flooded by winter rains	Waterfowl using area	N/A	N/A
Unit 63	43	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 68	19	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 69	9	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 70	9	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 71	1	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 72	15	Grassland birds	Provide 207 acres of old field habitat for grassland birds and other early successional species.	Fallow field	Mow after August 1 to set back succession	N/A	N/A	N/A	Unable to mow in 2004--insufficient staff	Provide staff to mow
Unit 93	273	Invasive control	No measurable objective developed. Need to control Lotus (*Nelumbo lutea*) in unit	Open water with extensive area of lotus.	Early draw down. Keep dry throughout summer. Spray lotus aerially if necessary	PUP	Lotus appears unaffected	Not measured	Unable to spray aerially--purchase order not processed in timely manner. Brushy Creek repeatedly back flooded area so unable to dry completely	Try to spray without drying first. Replug structure after drying to prevent back flow from Brushy Creek
Walker Tract ditches	?	Invasive control	No measurable objective developed. Need to control parrotfeather on the Walker Tract	Parrotfeather colonizing ditches and beginning to spread into impoundments	Spray with rodeo to see if effective	PUP	Parrotfeather initially died back (probably aerial portion of plant only) but came back later in the growing season, apparently unaffected	N/A	Parrotfeather was not controlled	Need to investigate other control measures for parrotfeather.

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Walker Tract	557	Invasive control	No measurable objective developed. Need to control nutria on Walker tract	Nutria causing extensive damage to levee system. Seen frequently, particularly in spring and fall	Remove nutria through trapping and shooting	N/A	N/A	Removed 39 nutria from Walker and 2 from Tallahatchie. Trapping and shooting were both successful, particularly in early spring	N/A	Continue trapping/shooting program
Throughout	4199	Nesting structures	No measurable objective developed. Maintain and monitor wood duck nest structures.	Nineteen wood duck nest boxes present	Add additional wood duck boxes. Monitor and maintain existing boxes	N/A	Five additional boxes were added.	Additional boxes were used this year.	Dump nesting increasing	Test methods to reduce dump nesting without increasing the number of boxes.

Structures that have been boarded as of 11/02/04

- Butler - 1
- Prestidge - 2 (Upchurch)
- Harris - 5 all except structure in cross levee
- Walker - 2 2 main structures just in gate.
- Gwin - 3
- Kolle - 1
- Riley - 1
- James - 2
- Coldwater - 1 west side on gravel road.
- Robertson - 5
- Trainor - 5
- Pennington - 5
- Watts - 2
- Starr - 5
- Gillon - 3
- Millican - 2
- Tallahatchie - all ~~except bean field behind grain bins.~~
- Scott - 5
- Whaley - 1 old levee blown out (next to river
- Bowlin - 3
- Goss - 3
- Lindsey - 1 junkyard (not other Lindseys)
- Hester - 1
- Parall - 3
- Wilkins - 4
- Maybus - 4
-

Warwick 12+44 = 56 (1%) Ponds = 4392 (29%) 14910 420/2374 18% ac.
309/2374 13%. 2005
Sump 8282 + 1768 + 412 = 10462 (70%)

Coldwater River National Wildlife Refuge Annual Habitat Work Plan

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Management Unit	Acres	Conservation Target(s) (Habitat/Wildlife)	Habitat Objective	Current condition	Management Prescription	Supporting Documentation
A 5% 75 150 225	16 4%	Wintering diving ducks	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Hold water through spring, summer, and fall. Spot spray willows with Rodeo.	PUP
B 10% 50 200 250	14 3%	Spring and fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, disk, smooth bottom, and reflood. Draw down in August for shorebirds.	
C 3% 120 20 140	20 5%	Wintering diving ducks	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Hold water to promote growth of Sagittaria. Spray ludwigia with "AIM" if approved	PUP
D 3% 50 100 150	18 4%	Spring and fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, disk, smooth bottom, and reflood. Draw down in August for shorebirds.	
E 5% 200 15 215	16 4%	Wintering dabbling ducks, spring migrating shorebirds	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering	Early drawdown, smooth impoundment bottom. Spot spray willows as needed	PUP

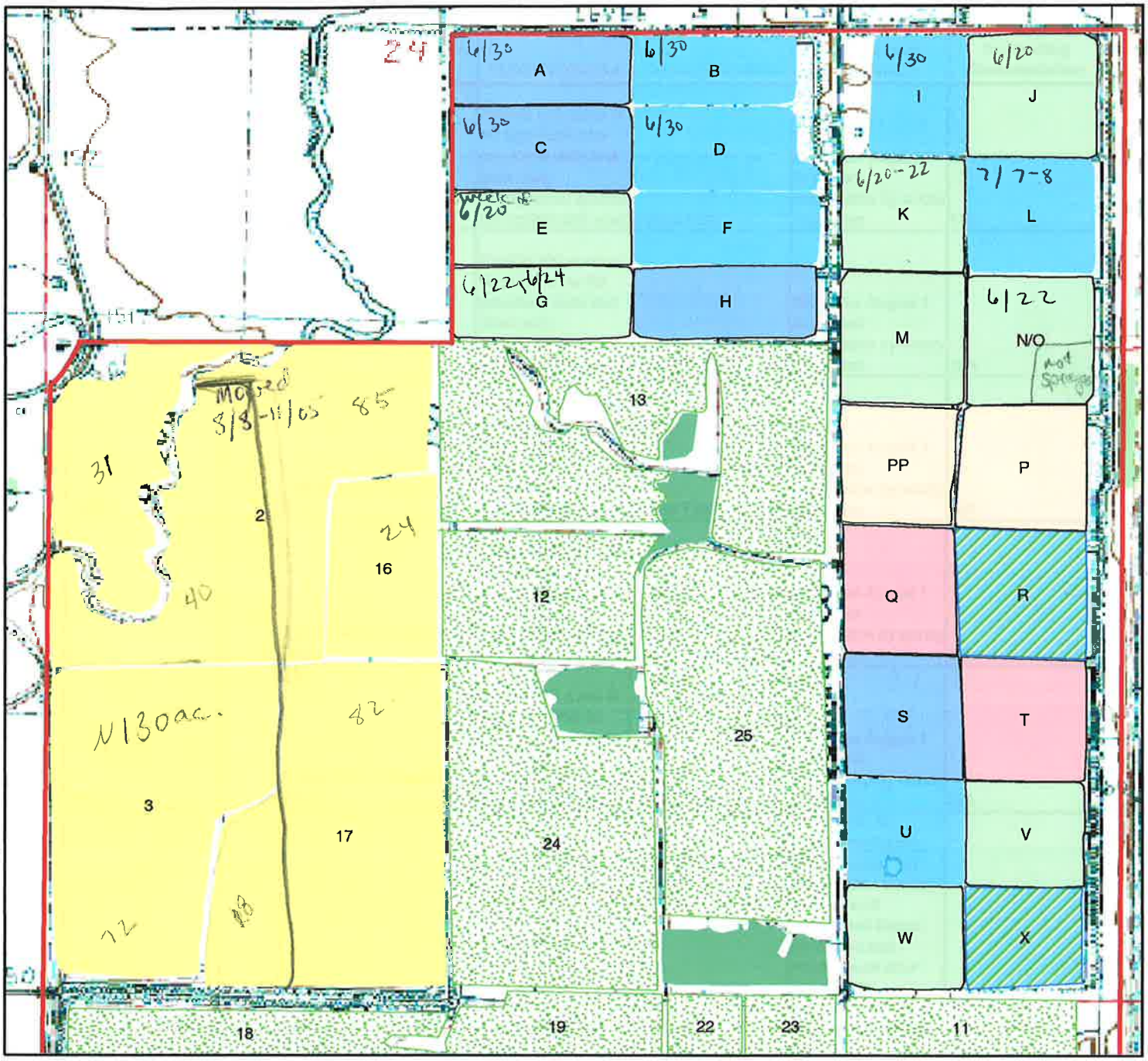
				2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP		
20 100 (120) F 3% 39%	17 4%	Spring and fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, disk, smooth bottom, and reflood. Draw down in August for shorebirds.	
15 40 (55) G 1%	16 4%	Wintering dabbling ducks, spring migrating shorebirds	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, smooth impoundment bottom. Spot spray willows as needed	PUP
12 25 (37) H 1%	17 4%	Wintering diving ducks	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Hold water through spring, summer, and fall. Spray ludwigia with "AIM" if approved.	PUP
3 100 (103) I 2%	14 3%	Spring and fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, disk, smooth bottom, and reflood. Draw down in August for shorebirds.	
100 (100) J 9%	20 5%	Wintering dabbling ducks, spring migrating shorebirds	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil	Early drawdown, smooth impoundment bottom. Spot spray willows as needed	PUP

				vegetation. Bottoms of ponds need to be smoothed ASAP		
K 5%	18 4%	Wintering dabbling ducks, spring migrating shorebirds	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, smooth impoundment bottom. Spot spray willows as needed	PUP
L 3%	18 4%	Spring and fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Levees cut down and reworked in Fall 2004, new pipes installed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, disk, smooth bottom, and reflood. Draw down in August for shorebirds.	
M 1%	21 5%	Wintering dabbling ducks	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Thick growth of willows (mostly less that 2 inches dbh)	Early drawdown followed by mechanical removal of willows (bulldozer or excavator) and spraying if necessary.	PUP
N/O 1%	20 5%	Wintering dabbling ducks, spring migrating shorebirds	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Levees cut down and reworked in Fall 2004, new pipes installed. Levee separating into 2 smaller units removed. Extra dirt deposited within pond covering 2004 moist soil vegetation. Bottoms of ponds need to be smoothed ASAP	Early drawdown, smooth impoundment bottom.	
PP	17 4%	Wintering dabbling ducks, invasive control	Provide 190 acres of moist-soil habitat for over-wintering waterfowl. Control willow (*Salix nigra*)	Northern levee cut down and reworked in Fall 2004. Extra dirt deposited within pond covering 2004 moist soil vegetation. Pond invaded by willows. Bottoms of ponds need	Mid-season draw down (start draw down at least 3 weeks after willow seed out), smooth impoundment bottom. Spot spray willows as needed Evaluate potential as habitat for secretive marshbirds.	PUP

				to be smoothed ASAP		
P 4%	20 5%	Wintering dabbling ducks, invasive control	Provide 190 acres of moist-soil habitat for over-wintering waterfowl. Control willow (*Salix nigra*)	Northern levee cut down and reworked in Fall 2004. Extra dirt deposited within pond covering 2004 moist soil vegetation. Pond invaded by willow. Has established stand of older willows and button bush. Bottoms of ponds need to be smoothed ASAP	Mid-season draw down (start draw down at least 3 weeks after willow seed out), smooth impoundment bottom. Spot spray willows as needed to prevent additional germination	PUP
Q 11%	18 4%	Fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Dominated by sedge and fall panicum in 2004. Some willows beginning to encroach.	Hold water through summer. Begin slow drawdown in August. Assess willow stand and spot spray edges if necessary to prevent further colonization.	PUP
R 6%	21 5%	Secretive Marshbirds	Emergent marsh	Diverse assemblage of emergent vegetation	Hold water throughout to promote growth of rushes and cattails and restrict growth of woody vegetation. Spot spray willows as necessary	PUP
S 11%	18 4%	Wintering diving ducks, invasive species control	Provide 190 acres of moist-soil habitat for over-wintering waterfowl. Control willow (*Salix nigra*)	Patch of willows in nw portion of pond. Willows moving into other areas as well. Late drawdown in 2004 produced dense stand of sedge.	Hold water through spring, summer, and fall. Spot spray willows with Rodeo.	PUP
T 3%	19 5%	Fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Central portion of unit with declining buttonbush stand.	Hold water through summer. Begin slow drawdown in August	
U 14%	16 4%	Spring and fall migrating shorebirds	Provide 225 acres of fall foraging habitat for migrating shorebirds	Mid-season drying in 2004 produced diverse stand of moist soil vegetation.	Early drawdown, disk, smooth bottom, and reflood. Draw down in August for shorebirds.	PUP
V 6%	16 4%	Wintering dabbling ducks, invasive species control	Provide 190 acres of moist-soil habitat for over-wintering waterfowl. Control Lotus (*Nelumbo lutea*)	Healthy stand of lotus established in middle of unit. Has potential to spread throughout.	Early drawdown. Reflood with winter rain (i.e. leave dry as long as possible).	
W 4%	15 4%	Wintering dabbling ducks, spring migration shorebirds	Provide 190 acres of moist-soil habitat for over-wintering waterfowl	Open water with little vegetation except along shoreline.	Early drawdown. Spot spray willows as needed.	

X	15 4%	Secretive Marsh birds	Emergent marsh	Diverse assemblage of emergent vegetation	Hold water throughout to promote growth of rushes and cattails and restrict growth of woody vegetation. Spot spray willows as necessary	PUP
1	31	Grassland birds	Fallow field	Fallow field	Mow	
2	85	Grassland birds	Fallow field	Fallow field	Mow	
3	72	Grassland birds	Fallow field	Fallow field	Mow	
16	24	Grassland birds	Fallow field	Fallow field	Mow	
17	82	Grassland birds	Fallow field	Fallow field	Mow	

Annual Habitat Work Plan 2005
Coldwater River National Wildlife Refuge



Legend

- Refuge boundary
- early drawdown, reflood
- early drawdown
- fallow field - mow
- keep flooded
- mid-season drawdown
- August drawdown
- marshbirds
- saplings
- willows

0 0.125 0.25 0.5 Miles

N
W E
S

North Mississippi Refuges Complex
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R.L. Rosamond 12/29/04